Amendments to the Claims

Kindly amend claims 2, 3 & 9 and cancel claims 1, 8 & 10-32 (without prejudice) as set forth below. All pending claims are reproduced below, with changes in the amended claims shown by underlining (for added matter) and strikethrough/double brackets (for deleted matter).

1. (Canceled).

2. (Currently Amended) ~~The method of claim 1,~~ A packet flow control method for a switching node of a data transfer network, said method comprising:

actively managing space allocations in a central queue for a plurality of ports of a switching node of a data transfer network, wherein the actively managing is based on an amount of currently unused space in the central queue;

wherein the actively managing includes determining, based on an amount of currently-vacant storage space in a storage device of a port of the plurality of ports, whether the port accepts an offered space for use by the port to buffer received data packets, the offered space comprising a quantity of the amount of currently unused space in the central queue; and

wherein said determining further comprises:

(i) computing a total current credit for the port, wherein the total current credit is defined as a difference between a space allocation in the central queue for the port and an amount of the space allocation currently used to buffer the received data packets;

(ii) comparing the total current credit to the amount of currently-vacant storage space in the storage device of the port;

(iii) accepting the offered space if the amount of currently-vacant storage space in the storage device of the port is greater than the total current credit; and

(iv) refusing the offered space if the amount of currently-vacant storage space in the storage device of the port is less than the total current credit.

3. (Currently Amended) ~~The method of claim 1,~~ A packet flow control method for a switching node of a data transfer network, said method comprising:

actively managing space allocations in a central queue for a plurality of ports of a switching node of a data transfer network, wherein the actively managing is based on an amount of currently unused space in the central queue;

wherein the actively managing includes determining, based on an amount of currently-vacant storage space in a storage device of a port of the plurality of ports, whether the port accepts an offered space for use by the port to buffer received data packets, the offered space comprising a quantity of the amount of currently unused space in the central queue; and

wherein said determining further comprises:

multiplying the amount of currently-vacant storage space in the storage device of the port by a scaling factor, wherein the scaling factor accounts for a difference between a first bandwidth at an input of the port and a second bandwidth between the port and the central queue.

4. (Original) The method of claim 3, wherein said multiplying produces a scaled measure of vacant port storage space and said determining further comprises:

(i) computing a total current credit for the port, wherein the total current credit is defined as a difference between a space allocation in the central queue for the port and an amount of the space allocation currently used to buffer the received data packets;

(ii) comparing the total current credit to the scaled measure of vacant port storage space;

(iii) accepting the offered space if the scaled measure of vacant port storage space is greater than the total current credit; and

(iv) refusing the offered space if the scaled measure of vacant port storage space is less than the total current credit.

5. (Original) The method of claim 4, wherein the scaling factor is set substantially equal to a reciprocal of a fractional portion of data that is received by the port per a unit of time that will remain in the storage device of the port for a period exceeding the unit of time due to the difference between the first bandwidth and the second bandwidth.

6. The method of claim 4, wherein said method further comprises:

allocating, by a port credit manager, the offered space to at least one virtual lane of the port based on a space need of the at least one virtual lane if the offered space is accepted as a result of the determining.

7. (Original) The method of claim 4, wherein:

said method further comprises reckoning amounts of unused space remaining in space allocations in the central queue allotted to virtual lanes of the port, wherein an amount of unused space remaining in a space allocation in the central queue allotted to a virtual lane of the port comprises an amount allotted to the virtual lane, but currently not used to store a received data packet; and

said computing further comprises summing the amounts of unused space remaining in space allocations in the central queue allotted to the virtual lanes of the port.

8. (Canceled).

9. (Currently Amended) ~~The method of claim 8,~~ A packet flow control method for a switching node of a data transfer network, said method comprising:

actively managing space allocations in a central queue for a plurality of ports of a switching node of a data transfer network, wherein the actively managing is based on an amount of currently unused space in the central queue;

wherein the actively managing includes determining, based on an amount of currently-vacant storage space in a storage device of a port of the plurality of ports, whether the port accepts an offered space for use by the port to buffer received data packets, the offered space comprising a quantity of the amount of currently unused space in the central queue; and

wherein said actively managing further comprises:

returning the offered space back to the central queue as returned space if said determining results in a refusal of the offered space;

adding the returned space to the amount of currently unused space in the central queue; and

wherein:

the returned space includes vacated allocated space in the central queue that is currently assigned to a virtual lane of the port; and

said actively managing further comprises deducting, from a current space debt of the virtual lane, an amount representing the vacated allocated space included in the returned space, wherein the current space debt of the virtual lane comprises an amount of space by which a space allocation in the central queue allotted to the virtual lane exceeds a target allocation.

10-32. (Canceled).

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